UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,893	06/19/2003	Mahadev Somasundaram	CISCP340 / 6996	6796

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EXAMINER
WONG, BLANCHE

ART UNIT	PAPER NUMBER
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
Office Action Summary	10/600,893	SOMASUNDARAM, MAHADEV
	Examiner	Art Unit	
	Blanche Wong	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
-. Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>19 June 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-24</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-5,9 and 14-24</u> is/are rejected.

7)☒ Claim(s) <u>6-8 and 10-13</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>19 June 2003</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   **Claims 14-21** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3.   There is insufficient antecedent basis for this limitation in the claim.

Claim 14, line 5, "the plurality of routing tables".

Claim 14, line 10, "the identified routing table entry".

Claim 19, line 2, "default routes".

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   **Claim 1-5,14,15,22-24** are rejected under 35 U.S.C. 102(e) as being anticipated by Basso et al. (US 2004/0174879).

With regard to claims 1 and 22-24, Basso discloses

maintaining a plurality of routing tables **(a plurality of routing tables, para. [0028]; see also 204 in Fig. 2)**, each of the plurality of routing tables being associated with a different virtual private network **(a routing table is associated with a VPN, para. [0028])**;

receiving a packet **(data packet 210 in Fig. 2, para. [0025])**, the packet including an IP source address **(the network layer address, para. [0025], must be part of an IP source address in an MPLS system, para. [0022])** and an IP destination address **(IP destination address of the packet, para. [0025])**, the packet further including information **(Table ID 606 [of an entry of a VRF table] identifies the routing table, para. [0029], see also Fig. 6A)** indicating one of the plurality of routing tables to route the packet;

performing NAT on the packet **(two lookups, para. [0025])**;

identifying one of the plurality of routing tables to route the packet **(Table ID 606 identifies the routing table 504, para. [0029], see also Fig. 6A)**;

identifying an entry **(outer label 612 in routing table 504, para. [0030])** in the one of the plurality of routing tables using the IP destination address **(the IP destination address is used to matched with an entry in a VRF table, para. [0025] and in turn, the Table ID of the entry is used to identify an entry/outer label in a routing table)**; and

routing the packet **(tunnel the data packet)** using the identified routing table entry **(outer label) (outer label is used to tunnel the data packet across the LSP, para. [0030])**.

With regard to claim 2, Basso discloses the method as recited in claim 1. Basso

further discloses a different customer **(Site 1 can be an organization's private**

network, Site 2 can be a remote office in London, para. [0006]).

With regard to claim 3, Basso discloses the method as recited in claim 1. Basso

further discloses an ingress interface of a service provider network **(ingress LER, para.**

[0025]).

With regard to claim 4, Basso discloses the method as recited in claim 1. Basso

further discloses an egress interface of a service provider network **(egress LER, para.**

[0025]).

With regard to claim 5, Basso discloses the method as recited in claim 1. Basso

further discloses network devices **(ingress point border device 104, egress point**

border device 106, LERs, para. [0007]) associated with a service provider network

(network 100 in Fig. 1, para. [0007]).

With regard to claim 14,

maintaining a plurality of sets of routing information **(a plurality of routing**

tables, para. [0028]; see also 204 in Fig. 2), each of the sets of routing information

being associated with a different virtual private network **(a routing table is associated**

with a VPN, para. [0028]);

receiving a packet **(data packet 210 in Fig. 2, para. [0025])**, the packet

including an IP source address **(the network layer address, para. [0025], must be**

part of an IP source address in an MPLS system, para. [0022]) and an IP destination

address **(IP destination address of the packet, para. [0025])**, the packet further

including information **(Table ID 606 [of an entry of a VRF table] identifies the routing**

table, para. [0029], see also Fig. 6A) indicating one of the plurality of routing tables **(a**

plurality of routing tables, para. [0028]) to route the packet;

performing NAT on the packet **(two lookups, para. [0025])**;

identifying an entry **(outer label 612 in routing table 504, para. [0030])** in the

one of the sets of routing information using the IP destination address **(the IP**

destination address is used to matched with an entry in a VRF table, para. [0025]

and in turn, the Table ID of the entry is used to identify an entry/outer label in a

routing table); and

routing the packet **(tunnel the data packet)** using the identified routing table

entry **(outer label) (outer label is used to tunnel the data packet across the LSP,**

para. [0030]).

With regard to claim 15, Basso discloses the method as recited in claim 14.

Basso further discloses each of the sets of routing information corresponding to each

virtual private network is stored in a separate routing table **(a plurality of routing**

tables, para. [0028]).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   **Claims 9,17-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Basso in view of Rekhter et al. (U.S. 6,463,061)

With regard to claims 9 and 17-20, Basso discloses the method as recited in

claim 1. However, Basso fails to explicitly show receiving a default route advertised by

a network device providing one or more shared services available to each virtual private

network; and updating each of the plurality of routing tables to include the default route

to the network device providing one or more shared services available to each virtual

private network.

Rekhter discloses

receiving a default route **(access to node D and node D's reachability)**

advertised **(advertise)** by a network device **(CE's) (CE1 advertises to PE1 access to**

node D, col. 30, line 62; and CE2 advertises to all systems node D's reachability,

col. 31, lines 15-16) providing one or more shared services available to each virtual

private network **(VPN A and B in Fig. 9)** ; and

updating **(construct an FIB entry)** the sets of routing information **(per-VPN FIB)**

(regarding claim 18, per-VPN FIB is a single routing table and regarding claim 19,

the single routing table stores default route) (regarding claim 20, routing tables

stores the sets of routing information) to include the default route to the network

device providing one or more shared services available to each virtual private network

(PE2 construct an FIB entry in its per-VPN FIB, col. 31, lines 11-12; and PE3

construct an FIB entry in its per-VPN FIB, col. 31, lines 24-25).

At the time of the invention, it would have been obvious to a person of ordinary

skill in the art to include receiving a default route advertised by a network device

providing one or more shared services available to each virtual private network; and

updating each of the plurality of routing tables to include the default route to the network

device providing one or more shared services available to each virtual private network

as taught in Rekhter in Basso. The suggestion/motivation for doing so would have been

to provide for proper per-VPN FIB selection. Rekhter, col. 31, lines 47-48. Therefore, it

would have been obvious to combine Rekhter with Basso for the benefit of receiving a

default route advertised by a network device providing one or more shared services

available to each virtual private network; and updating each of the plurality of routing

tables to include the default route to the network device providing one or more shared

services available to each virtual private network, to obtain the invention as specified in

claims 9 and 17-20.

With regard to claim 21, the combination of Basso and Rekhter discloses the

method as recited in claim 17. Basso further discloses each of the plurality of routing

tables **(a plurality of routing tables, para. [0028]; see also 204 in Fig. 2)** being

associated with a different virtual private network **(a routing table is associated with a VPN, para. [0028])**.

Rekhter further discloses updating a plurality of routing tables **(per-VPN FIB)** to include the default route **(PE2 construct an FIB entry in its per-VPN FIB, col. 31, lines 11-12; and PE3 construct an FIB entry in its per-VPN FIB, col. 31, lines 24-25)**.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include updating a plurality of routing tables to include the default route as taught in Rekhter in Basso. The suggestion/motivation for doing so would have been to provide for proper per-VPN FIB selection. Rekhter, col. 31, lines 47-48. Therefore, it would have been obvious to combine Rekhter with Basso for the benefit of updating a plurality of routing tables to include the default route, to obtain the invention as specified in claim 21.

8.   **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Basso in view of Kubota et al. (US 2003/0142669).

With regard to claim 16, Basso discloses the method as recited in claim 14. However, Basso fails to explicitly show each entry in the routing table includes a VPN identifier identifying the corresponding virtual private network.

Kubota discloses each entry **(rows in a routing table)** in the routing table **(VPN routing table 81 in Fig. 8, para. [0099])** includes VPN identifier **(VPN column in Fig. 8, para. [0099])** identifying the corresponding virtual private network.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include each entry in the routing table includes a VPN identifier identifying the corresponding virtual private network as taught in Kubota in Basso. The suggestion/motivation for doing so would have been to provide for switching and routing at an edge node. Kubota, Fig. 6. Therefore, it would have been obvious to combine Kubota with Basso for the benefit of each entry in the routing table includes a VPN identifier identifying the corresponding virtual private network, to obtain the invention as specified in claim 16.

Allowable Subject Matter

9.   Claims 6-8,10-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the
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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BW
March 13, 2007

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SUPERVISORY PATENT EX°°
TECHNOLOGY CENTE!'